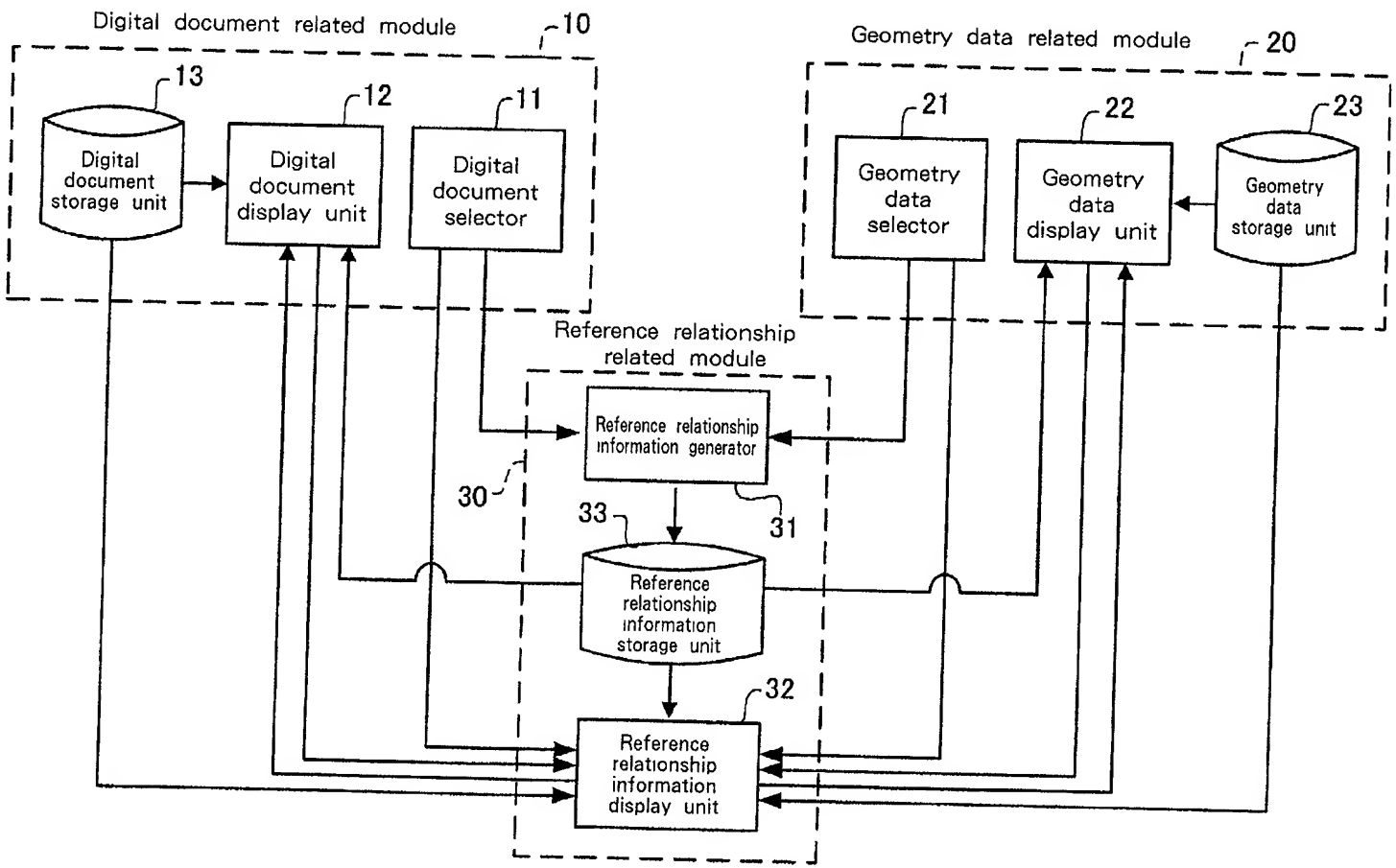
Digital document related module
10
13
12
11
Digital document storage unit
Digital document display unit
Digital document selector
Geometry data related module
20
21
22
23
Geometry data selector
Geometry data display unit
Geometry data storage unit
Reference relationship related module
Reference relationship information generator
30
31
33
Reference relationship information storage unit
32
Reference relationship information display unit

Fig. 1

Process for generating a reference relationship information from a digital document to geometry data

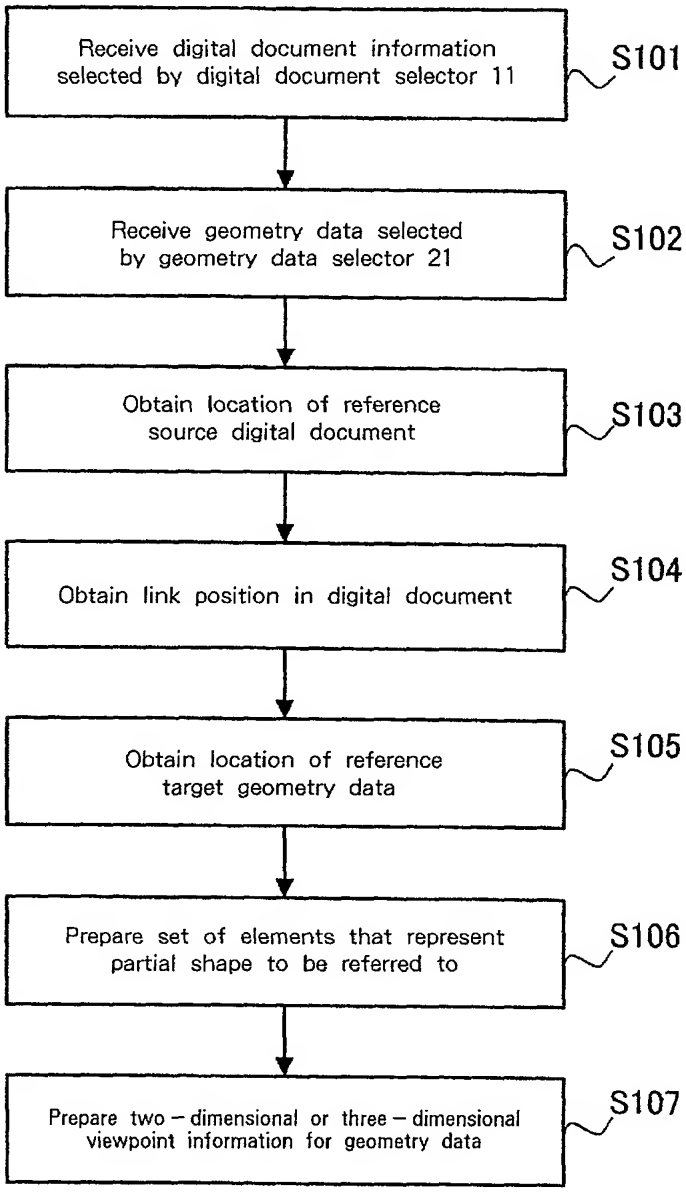

Fig. 2

Process for generating a reference relationship information from geometry data to a digital document

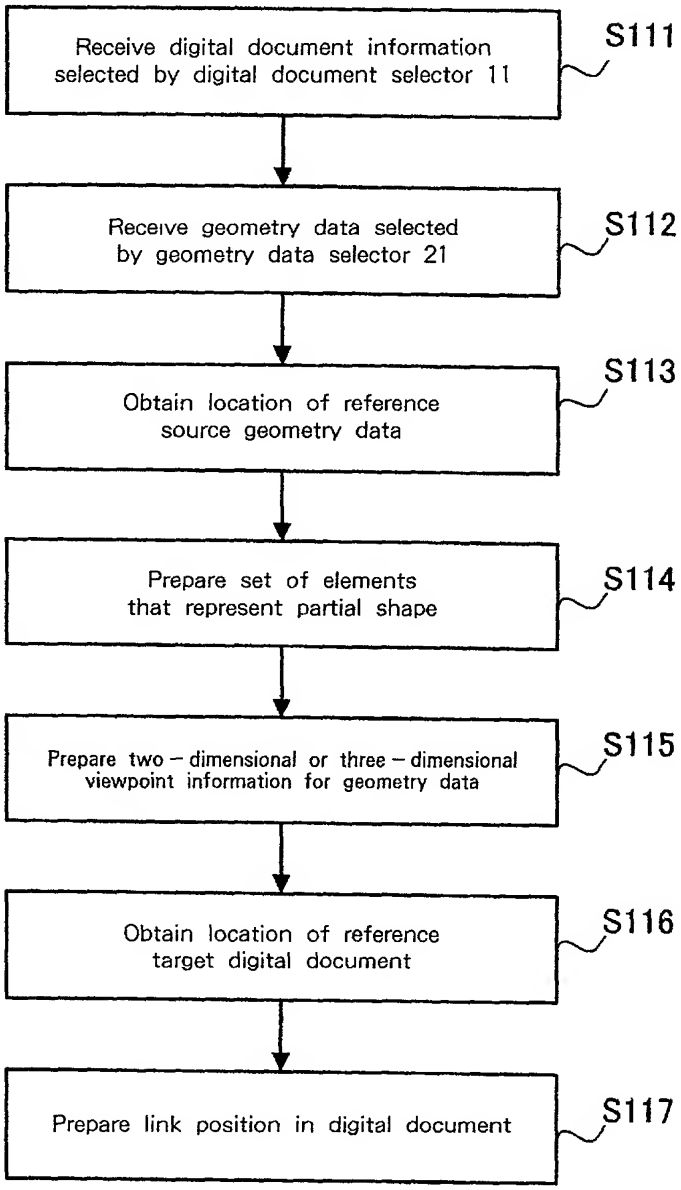

Fig. 3

(a) Process for displaying digital document

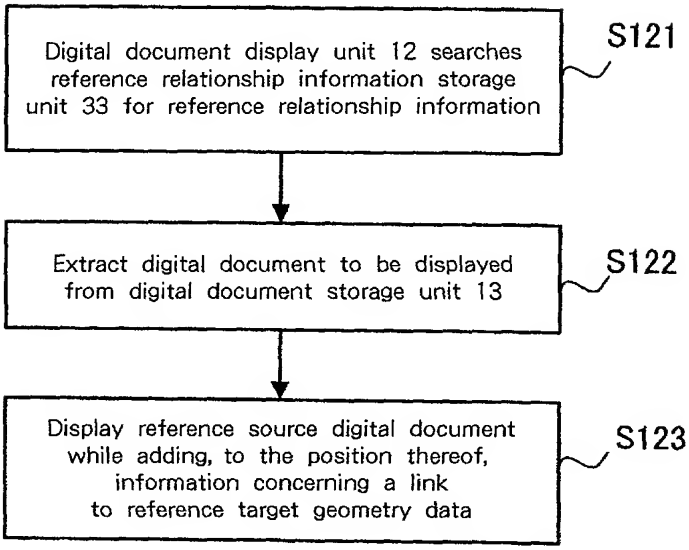

Fig. 4A

(b) Process for displaying geometry data

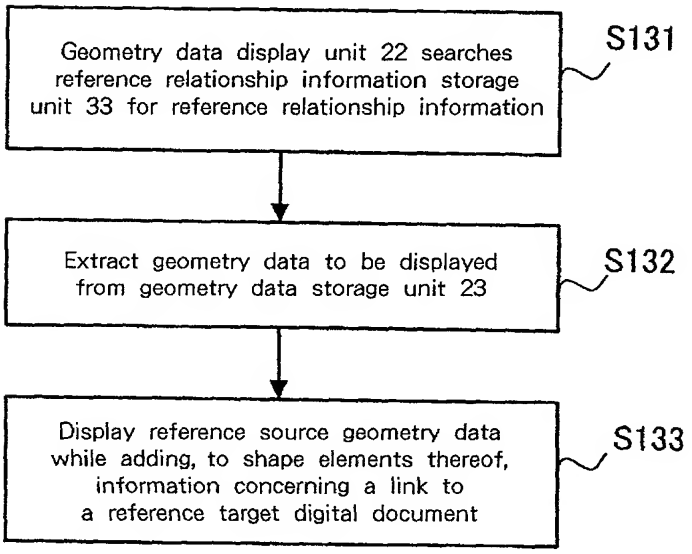

Fig. 4B

2005/04/26 15:34:08 #0002 JP9 2000 0002 US1

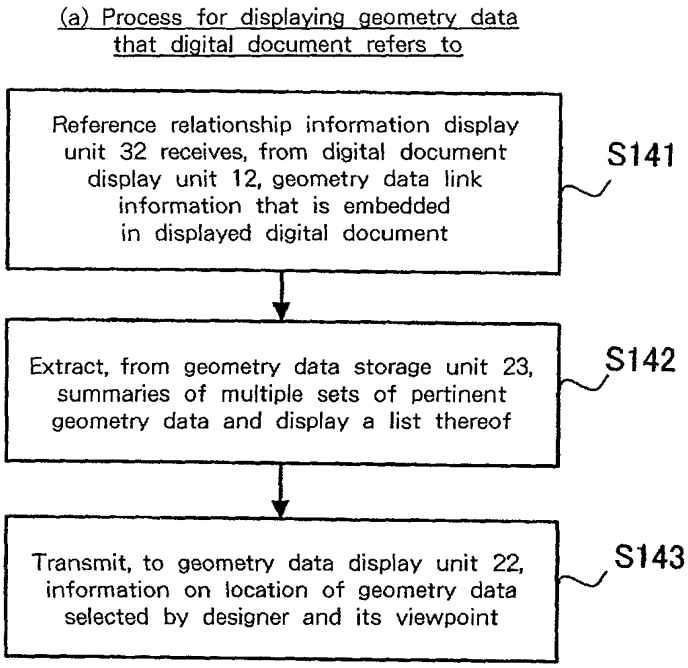

Fig. 5A

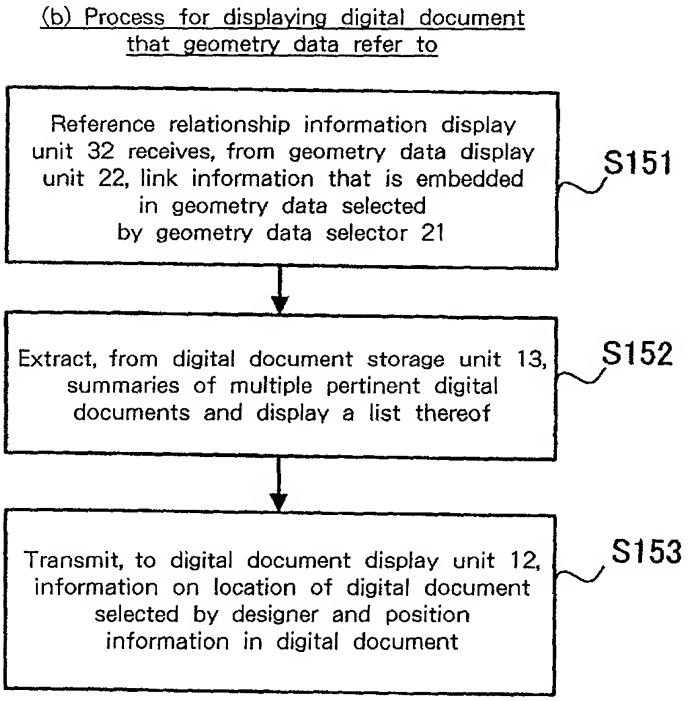

Fig. 5B

JP9-2000-0002-US1

(a) Process for displaying geometry data that refer to a digital document

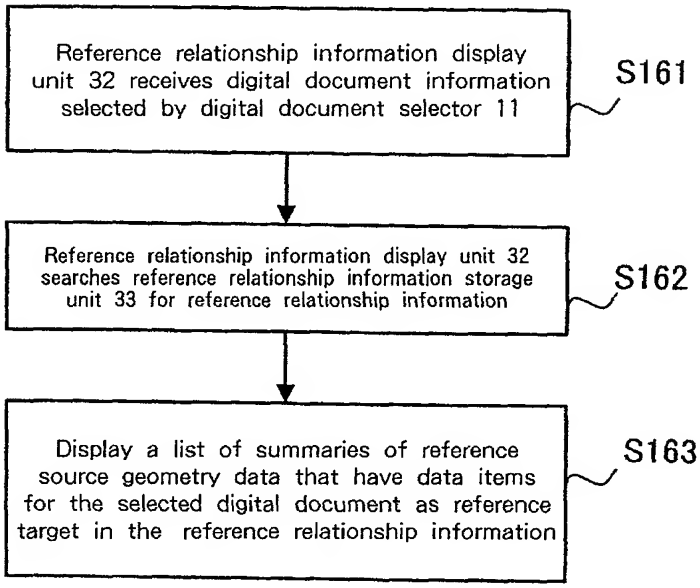

Fig. 6A

(b) Process for displaying a digital document that refers to geometry data

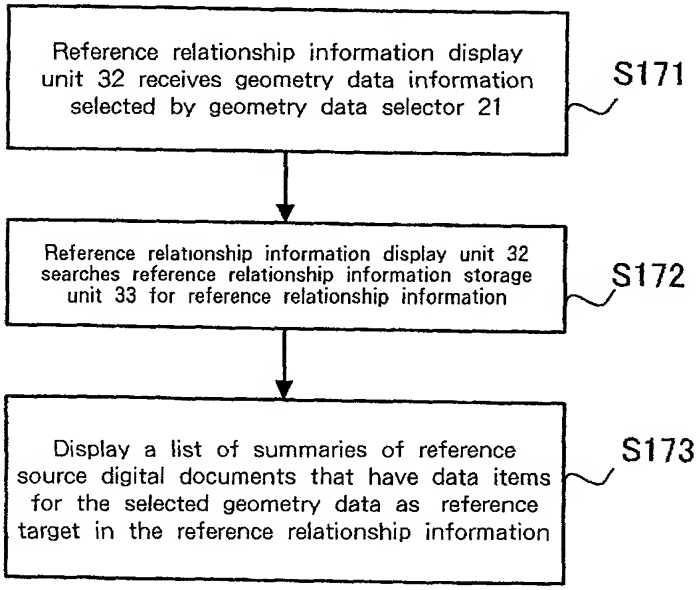

Fig. 6B

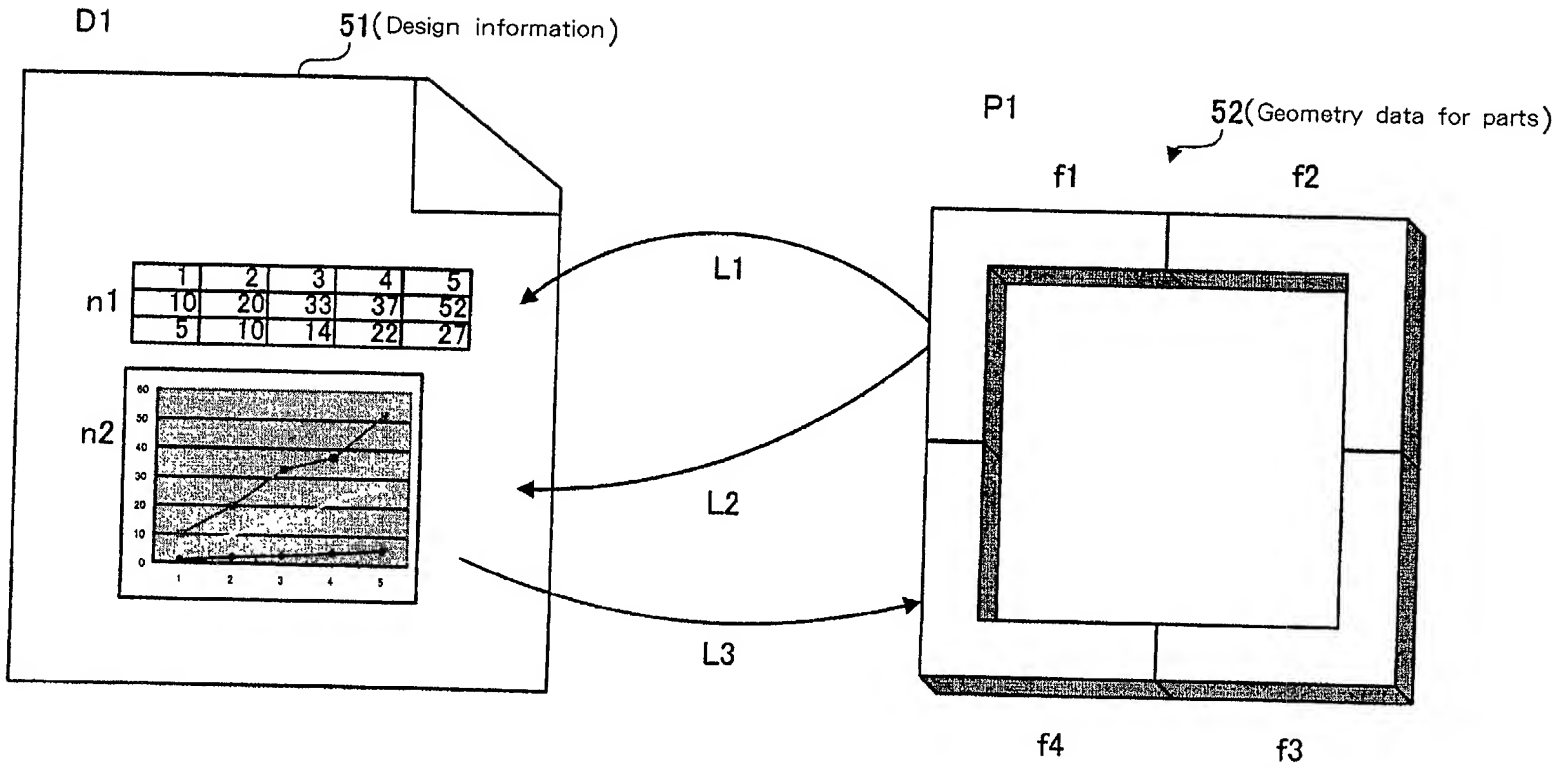
D1
51(Design information)
P1
52(Geometry data for parts)
f1
f2
n1
1 2 3 4 5
10 20 33 37 52
5 10 14 22 27
n2
L1
L2
L3
f4
f3

Fig. 7

Fig. 8A

(a) Reference relationship information in geometry data that refers to a digital document

Reference source geometry data	Reference source geometrical element	Reference source viewpoint information	Reference target digital document	Reference target position	Creation date	Creator	Reference frequency
P1	{f1}	((100,100,100),(0,0,0),100)	D1	n1	99/08/20	A. O.	1
P1	{f1}	((100,100,100),(0,0,0),100)	D1	n2	99/08/21	Y. O.	1

Fig. 8B

(b) Reference relationship information in a digital document that refers to geometry data

Reference source digital document	Reference source position	Reference target geometry data	Reference target geometrical element	Reference target viewpoint information	Creation date	Creator	Reference frequency
D1	n2	P1	{f4}	((100,100,100),(0,0,0),100)	99/08/20	A. O.	1

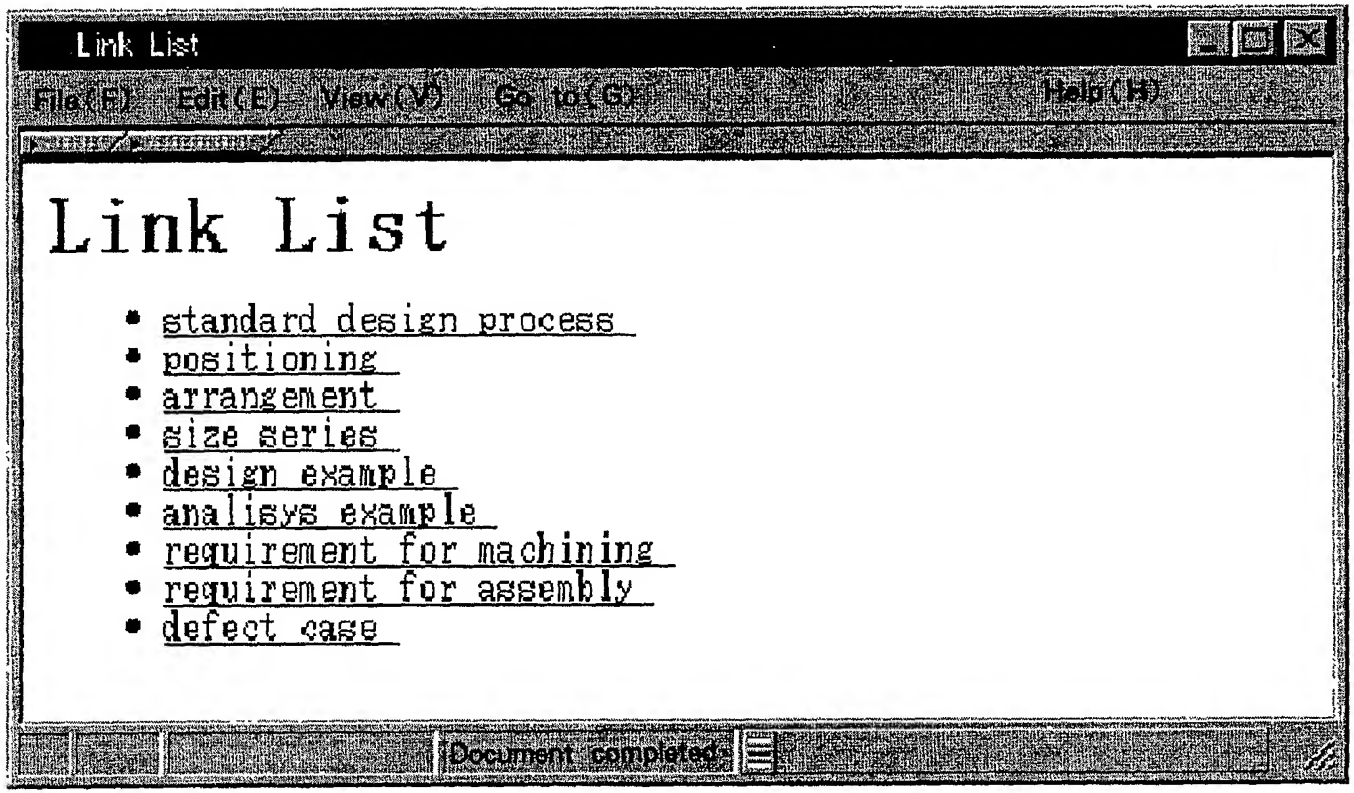
Link List
File(F) Edit(E) View(V) Go to(G) Help(H)
Link List
standard design process
positioning
arrangement
size series
design example
analisys example
requirement for machining
requirement for assembly
defect case
Document completed.

Fig. 9

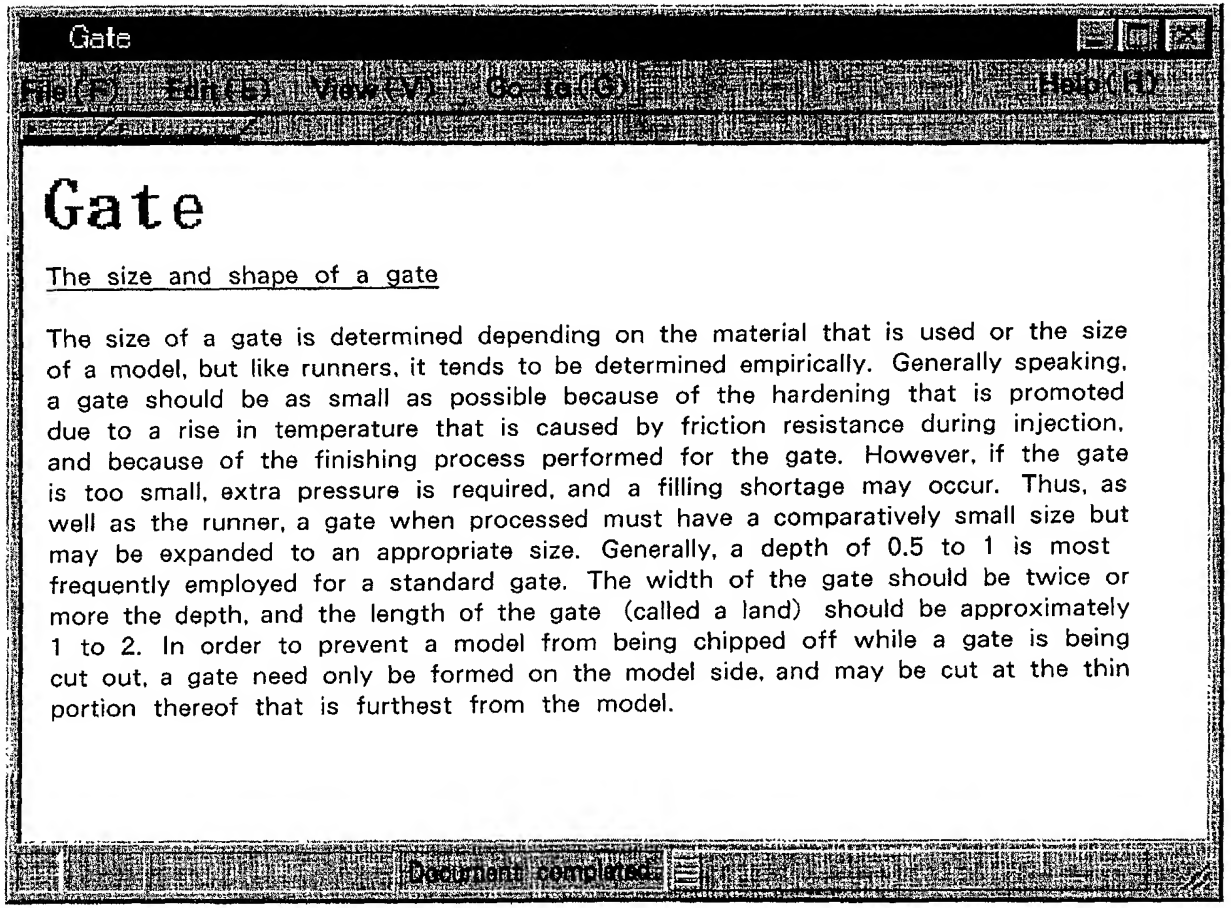
Gate
File(F) Edit(E) View(V) Go to(G) Help(H)
Gate
The size and shape of a gate
The size of a gate is determined depending on the material that is used or the size of a model, but like runners, it tends to be determined empirically. Generally speaking, a gate should be as small as possible because of the hardening that is promoted due to a rise in temperature that is caused by friction resistance during injection, and because of the finishing process performed for the gate. However, if the gate is too small, extra pressure is required, and a filling shortage may occur. Thus, as well as the runner, a gate when processed must have a comparatively small size but may be expanded to an appropriate size. Generally, a depth of 0.5 to 1 is most frequently employed for a standard gate. The width of the gate should be twice or more the depth, and the length of the gate (called a land) should be approximately 1 to 2. In order to prevent a model from being chipped off while a gate is being cut out, a gate need only be formed on the model side, and may be cut at the thin portion thereof that is furthest from the model.
Document: completed

Fig. 10

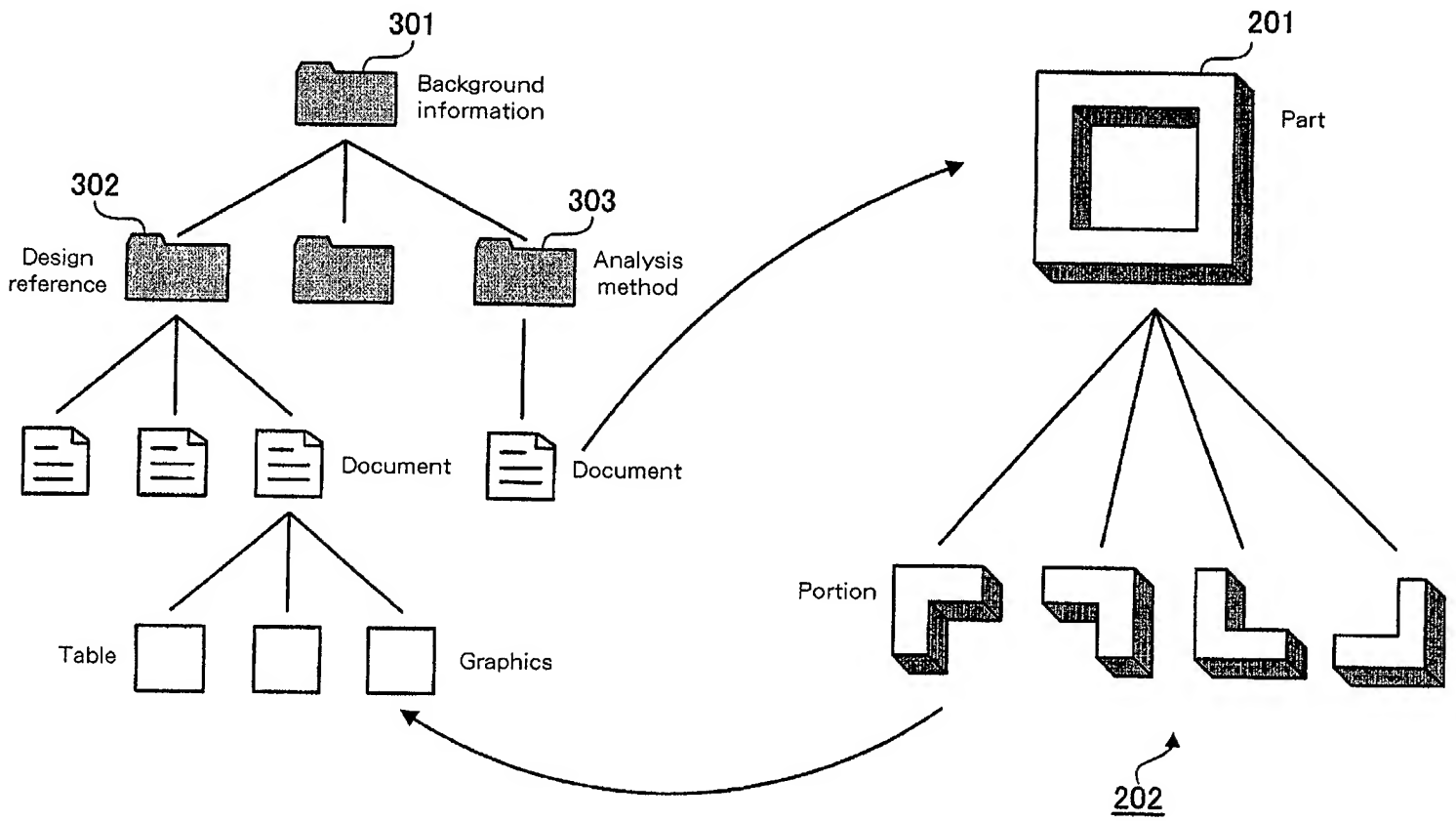
301
Background information
302
303
Design reference
Analysis method
Document
Document
Table
Graphics
201
Part
Portion
202

Fig. 11